

MAGNESIUM DEFICIENCY OF FOLIAGE PLANTS

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Symptoms of magnesium (Mg) deficiency are among the most widely observed nutritional problems in Florida foliage plant production (1,2). Magnesium is a key constituent of chlorophyll, the green pigment in plants which is responsible for photosynthesis. It is also active in enzyme systems (4). Soilless artificial growing media frequently used in Florida are low in Mg, requiring a fertilizer program supplying Mg. Many plant nutrients are readily leached from Florida's sandy soils (3).

SYMPTOMS: Magnesium, not to be confused with manganese (Mn), is easily translocated within the plant (4). It is preferentially moved to rapidly differentiating terminal areas of the plant; thus deficiencies are evident in older leaves first. Calcium in plants exists in a sensitive balance with magnesium and some other nutrients. What appears to be an excess of calcium may be the result of a lack of magnesium; whereas, an apparent excess of magnesium may respond to the addition of calcium (4).

In most foliage plants, chlorosis progresses inward and downward from the upper leaf margins, leaving an inverted V-shaped green area at the leaf base and a V-shaped area at the leaf tip (Fig. 1). Eventually, rusty brown necrosis begins where chlorosis was first apparent. The chlorosis which develops is a bronze yellow color giving Mg deficiency the name "bronzing disease" (2).



Figure 1. Anthurium leaf showing inverted V-shaped green area at base; characteristic of Mg deficiency. DPI photo, Jeff Lotz.

Many of the foliage ornamentals with pinnately veined leaves (such as *Philodendron scandens* subsp. *oxycardium*) and the palms (such as *Chrysalidocarpus lutescens*) exhibit this symptomatology (1,2).

FERTILIZATION: Foliage plants have high requirements for calcium (Ca) and Mg (1,2). Both are available in dolomite, which is slowly available and should be added to the media. Tissue levels of 0.35 to 0.50 percent dry weight Mg should be maintained (2).

SURVEY AND DETECTION: Look for an inverted V-shaped green area at the leaf base surrounded by a chlorotic area.

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